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Super Farms: How Accurate Are the Stereotypes?

Drought of 1983 page 11

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PERSPECTIVES

CROP PRODUCTION FORECASTS TOOK A SHARP, DOWNWARD TURN in September after analysts reviewed state-by-state measures of August drought damage. USDA's latest forecasts point to the smallest corn crop since 1970, the smallest soybean crop since 1976, and the smallest cotton crop since 1967—a combination of acreage reductions and drought. Both corn and soybean yields are pegged at their lowest since 1974. Drought also cut sorghum, barley, peanut, and tobacco yields.

Together, the two major corn states may produce less than a third of this year's corn crop, compared with 37%-39% of the last two harvests. Iowa corn yields are expected to drop to around 90 bushels an acre, down from last year's 121. Illinois corn yields are estimated at only 78 bushels an acre, down from 134.

Price forecasts went in the other direction. USDA's September figures peg 1983/84 farm prices for corn at a record season average of $3.50-$3.75, up from an estimated $2.65 a bushel in 1982/83. Soybean prices may average a record $8.50-$9.50 a bushel, up from $5.65. Analysts anticipate a large increase in wheat feeding as wheat is substituted for corn and soybeans in animal rations. Export volume for corn and soybeans will also suffer, though higher prices could more than compensate.

Stocks will plunge. Based on their domestic and foreign demand projections, USDA analysts say corn stocks may drop to around 900 million bushels by the end of the 1983/84 season. That would be the lowest level since 1976/77 and only about a fourth of the estimated 3.4 billion bushels at the end of 1982/83. End-of-season stocks of soybeans may slide to 150 million bushels, a third of last season's level. Wheat stocks, however, are unlikely to show more than a slight decline.

	Marketing years[1]				
	1979/80	1980/81	1981/82	1982/83	1983/84[2]
Production:					
Corn (bil. bushels)	7.94	6.64	8.20	8.40	4.39
Soybeans (bil. bushels)	2.27	1.79	2.00	2.28	1.53
Wheat (bil. bushels)	2.13	2.37	2.80	2.81	2.41
Cotton (mil. bales)	14.6	11.1	15.6	12.0	7.8
Yield per acre:					
Corn (bushels)	109.7	91.0	109.8	114.8	85.1
Soybeans (bushels)	32.1	26.4	30.1	32.2	24.9
Wheat (bushels)	34.2	33.4	34.5	35.6	39.5
Cotton (pounds)	547	404	543	590	501
Average farm price:					
Corn ($/bushel)	2.52	3.11	2.50	2.65	3.50-3.75
Soybeans ($/bushel)	6.28	7.57	6.04	5.65	8.50-9.50
Wheat ($/bushel)	3.78	3.91	3.65	3.53	3.50-3.70
Cotton (¢/pound)	62.5	74.7	54.3	58.0	([3])

[1] Marketing years begin Oct. 1 for corn, Sept. 1 for soybeans, June 1 for wheat, and Aug. 1 for cotton. [2] September forecast. [3] USDA is prohibited from publishing cotton price projections.

Final production figures for fall harvests won't be in until January. In the last 10 years, the September corn forecast was below the final production figure in 8 years and above it twice. The average difference was 281 million bushels. For soybeans, the September forecast record is evenly split—5 years too low, 5 years too high. The average difference—75 million bushels.

How does the 1983 drought compare with past droughts? And what about its impact on the livestock sector? Farm incomes? Food prices? See the articles on pages 11 and 13. Keep in mind that crop prospects have soured a bit since both were written.

FARMLINE

AGRICULTURE . . . NATURAL RESOURCES . . . RURAL DEVELOPMENT
Practical economic intelligence from USDA's Economic Research Service

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In 1969, only one in every thousand U.S. farms rang up $500,000 or more in annual sales. Today, these farms number one in every hundred. They turn out more than a fourth of the value of U.S. farm output and reap 60% of net farm income. What resources do they control, how do they operate, where do they earn their income? Are they big farms or big business? The answers may challenge some of the stereotypes about America's largest farms.

Industrial Growth: Municipal Problems Move to the Country *by Ellen Banker* 8

Industrial growth in rural areas can be a mixed blessing. The benefits are hard to resist, but so are the problems that accompany an influx of new businesses and new residents. The frequent result: strains in public services and local government budgets. There's hope, according to two USDA analysts. After outlining the problems, they list several promising strategies that rural communities can use in managing growth.

The Legacy of Drought '83 *by Eric Van Chantfort* 11

The drought of 1983 has cooked up a summer many farmers would rather forget. In its wake are withered corn and soybean fields and sharply higher feed costs for livestock and poultry producers. In terms of crop and yield losses, it may go down as the worst drought since 1974—and possibly as the worst since the 1930's. Whatever the ranking, it leaves an uneven legacy among producers.

Waiting for the Food Bill *by Eric Van Chantfort* 13

For most consumers far from the farm, the impact of the drought will be measured at the grocery store. In the process, the drought may get more blame than it deserves. Fears of huge price markups or drought-caused food shortages are out of tune with the facts. Food prices will probably rise at a faster rate next year than they have this year, but not primarily because of the drought.

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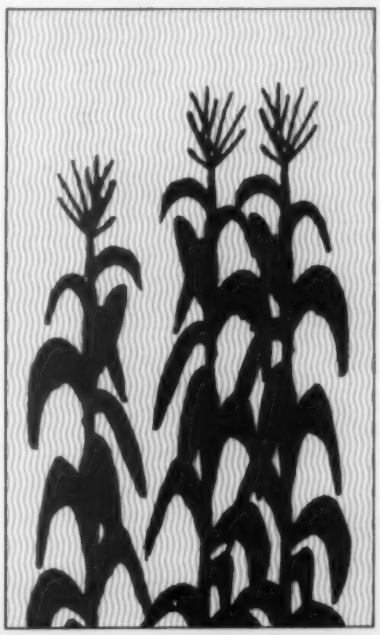


Profile of the Super Farms

They are called the top farms, the super farms, and sometimes—with a tone of disapproval—the "corporation" farms. Whatever the label, more farms than ever have entered the $500,000 sales class, and these farms are playing an increasingly important and controversial role in U.S. agriculture.

In 1969, only one in every thousand U.S. farms rang up $500,000 or more in sales of agricultural products. Today, the $500K farms number about one in every hundred.

The dramatic growth in their ranks, however, cannot explain their huge slice of the farm production and farm income pie—a slice that is far out of proportion to their 1-percent share of farm numbers. These farms encompass about 8 percent of all U.S. farmland, turn out more than a fourth of the total value of U.S. farm production, and reap an astonishing three-fifths of U.S. net farm income. They also generate two conflicting stereotypes.

On one hand, the nation's sales giants are extolled as international models of successful, large-scale agriculture. They're shown off to foreign dignitaries, and they're cited as symbols of American productive efficiency and private enterprise at its best.

On the other hand, these farms are often stereotyped as huge corporate subsidiaries that feed on the federal treasury. They're accused of swallowing up America's traditional family farms and of wringing their profits from federal farm programs and subsidized western irrigation water. They're even characterized as land-hungry, energy-intensive, inefficient operations.

Are the largest farms the cream of the crop, or does their numerical growth represent a disturbing trend in U.S. agriculture? The information that is available doesn't offer a definitive answer, but it does present a more complex and diversified image than either of the stereotypes might suggest.

For example, these farms come in all sizes, from less than a hundred acres to several thousand. They include fruit, vegetable, cotton, and grain farms, as well as dairy, poultry, and hog farms, cattle ranches, feedlots, and many other types of operations. They vary in location and type of ownership.

Nevertheless, it's true that these farms are heavily concentrated in certain commodities and geographic areas. Based solely on their numbers, they do receive a disproportionate share of farm program payments. In many cases, they also fly the corporate banner, but that doesn't necessarily mean that any ownership shares are held outside the farm operator family.

What is the profile of America's largest farms? What resources do they control, how do they operate, and where do they earn their income? Here are some of the facts, according to USDA economist Paul Velde of the Economic Research Service.

The number of U.S. farms declined from about 3 million to 2.4 million between 1969 and 1982. In the same period, farms in the $500,000-and-up sales class increased from about 4,000 to 25,000. Inflation alone cannot account for this growth.

While the number of large farms climbed more than 500 percent, prices received by farmers increased just 125 percent, and the overall level of consumer prices rose 163 percent. The implication: While inflation—higher price levels—pushed some farms into the $500K sales class, most of the farms entering this group apparently did so through real farm growth and consolidation.

In 1978, the year of the latest land-ownership data, these large farms owned, rented, or leased 84.5 million acres of land, 8.2 percent of all U.S. farmland. Their average size was nearly 4,700 acres, more than 11 times the size of the average American farm. Pasture and rangeland accounted for 64 percent of their acreage, cropland for 25 percent, and forest or other land for the remainder.

Together, these farms harvested about 21 million acres in 1978, 6.6 percent of total U.S. harvested cropland or an average of 1,175 acres per farm. The majority of $500K farms reported at least 400 acres of harvested cropland, but 18 percent had no harvested cropland, and another 9 percent harvested less than 50 acres.

The total value of these farms—including land, buildings, machinery, and crop and livestock inventories—was estimated at $56 billion in 1978, 7 percent of the combined value of all U.S. farms. Average value per $500K farm was over $3.1 million, compared with about $312,000 for the average U.S. farm.

Sales and Sources of Earnings

The market value of the products sold by the nation's largest farms added up to $29.6 billion in 1978, or 27 percent of total U.S. farm sales. Their crop sales amounted to $10 billion, while livestock, poultry, and dairy sales were nearly $20 billion.

In some products, these farms are of relatively minor importance in the overall U.S. production picture. In other products where they are heavily concentrated, they hold a dominant share of the market.

In the crops area, for example, the large farms rang up only 3.3 percent of total 1978 farm sales of tobacco and 7.2 percent of grain sales. On the other hand, they accounted for 62 percent of farm sales of vegetables, 55 percent of nursery and greenhouse product sales, and 44 percent of sales of fruits, nuts, and berries. These latter categories provided nearly $6 of every $10 in crop sales by the $500K farms.

Among livestock and poultry products, the large farms held a relatively small

share of the swine and dairy markets—only 9 percent of U.S. hog and pig sales and 13 percent of dairy sales. However, they were highly concentrated in sales of cattle and calves, with a 44-percent share; poultry and poultry products, with a 42-percent share; and other livestock and animal products, with a 32-percent share. Their largest product category, cattle and calves, brought them more than $13 billion in 1978 sales, reflecting their concentration in large-scale commercial cattle feeding.

If it appears that smaller farms are being squeezed out of some products, these concerns are reinforced by the growing reliance on contract sales in certain markets. USDA estimates for 1980 indicate that production and marketing contracts cover more than a fifth of total U.S. farm sales. Dependence on contracting is greatest in areas of specialization, including cattle feeding, poultry, and processed vegetables—areas where large operations predominate.

It appears that smaller farms are being squeezed out of some product markets.

Because of their volume, large farms may have a significant advantage in acquiring contracts with major processors. In fact, of the total market value of products produced under contract in 1979, the largest farms held nearly a 60-percent share.

Location and Organization

As might be expected from their commodity orientation, the $500K farms tend to be concentrated in certain states. In 1978, about 20 percent of the largest farms were located in California, and 7 percent were in Texas. Another 33 percent were spread among nine other states: Florida, Iowa, Nebraska, Kansas, Illinois, Colorado, Washington, Arizona, and North Carolina. Together, the large farms in California and Texas accounted for 34 percent of total sales by all farms in the $500K class.

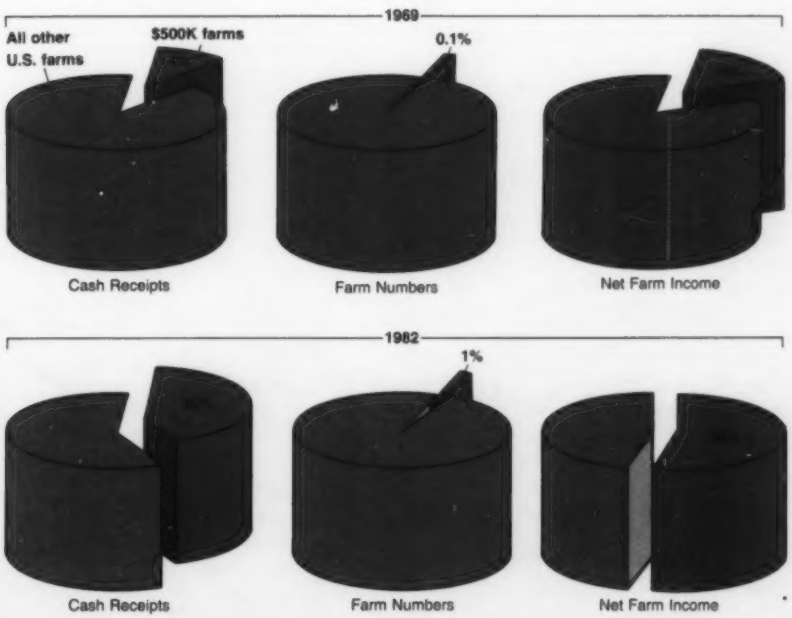
Many farms in California and other western states depend on federally subsidized water for crop irrigation, and large farms are probably well represented in this group. An accurate account by sales class isn't available, but this could not apply to the majority of $500K farms based on their geographic and product distribution.

Farms in the $500,000 Sales Class Dominate Some Product Markets

	Market value of products sold	Share of total U.S. farm sales
	$billions[1]	*percent*
All crops and livestock	**29.6**	**27.4**
All crops	**10.0**	**20.6**
Grains	1.9	7.2
Cotton and cottonseed	1.0	31.2
Tobacco	0.1	3.3
Fieldseeds, hay, forage, and silage	0.3	12.2
Vegetables, sweet corn, and melons	2.0	62.0
Fruits, nuts, and berries	2.0	43.6
Nursery and greenhouse products	1.6	55.2
Other crops	1.2	36.1
All livestock	**19.5**	**32.8**
Poultry and poultry products	3.6	41.9
Dairy products	1.5	13.1
Cattle and calves	13.2	44.1
Hogs and pigs	0.8	9.4
Sheep, lambs, and wool	0.2	29.8
Other livestock and livestock products	0.3	31.9

[1]Because of rounding, figures may not add exactly.
Source: 1978 Census of Agriculture

The $500K Class of 1982: 1% of U.S. Farms But 30% of Cash Receipts and 60% of Net Farm Income



Similarly, less than a majority of these farms are corporations, although corporate farms are more common in this sales class than in any other. In 1978, around 37 percent of large farms were sole proprietorships or joint husband-wife operations. Another 22 percent were partnerships, family or nonfamily.

Corporations accounted for about 40 percent of the farms and nearly half of their total acreage. Even in this category, the "family farm corporations" outnumbered the others four to one. Only 8 percent of all $500K farms and 11 percent of the total acreage fell under a nonfamily corporate ownership structure. Moreover, better than 85 percent of all U.S. farm corporations could be found among farms with less than $500,000 in annual sales.

Income and Expenses

Perhaps the most surprising statistic about the $500K farms is their share of U.S. net farm income. Net farm income is the difference between gross farm income and farm production expenses. For the $500K farms, net farm income rose from $2.3 billion in 1969 to $14.3 billion in 1982. These figures carried the large farms from a 16-percent share of total U.S. net farm income in 1969 to a 60-percent share in 1982.

The reason these operations came to dominate the net farm income picture is only partly due to the growth in their numbers. Even with that growth, their share of U.S. gross farm income reached only about 28 percent last year. On a per farm basis, their average gross farm income actually declined between 1969 and 1982—from about $2 million per unit to $1.8 million.

What really propelled the $500K group into a dominant net farm income role is their apparent ability to control production expenses, especially in comparison to farms in other sales classes. During a period when production expenses were rising faster than farm product prices, the largest farms managed to maintain

Much of their strength is in their success in controlling production expenses.

their margins between gross income and outlays.

While their numbers increased sixfold, their share of total farm sector production expenses rose from about 12 percent in 1969 to only 22 percent in 1982. On a per farm basis, their production expenses actually declined slightly. For all other farm sales classes, average production expenses per farm increased sharply.

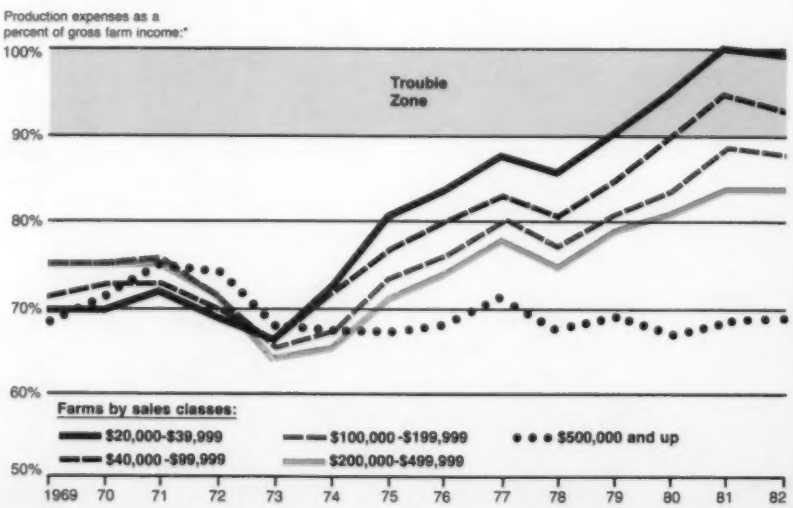
In 1969, the $500K farms generated about $1.47 in gross income for every dollar paid out to meet production expenses. In 1982, the figure was just as impressive—$1.46. On average, the rest of the farm sector wasn't too far behind in 1969, with gross income of $1.31 per dollar of expenditure. But, by 1982, the story was quite different. Average earnings for farms in other sales classes had plunged to $1.09 per dollar of expenses, indicating a serious income-expense squeeze, particularly on midsize and small farms without off-farm income.

Farm Program Benefits

Various studies have shown that larger farms tend to benefit heavily from price support and paid acreage set-aside and diversion programs. One reason is that payments are geared to production or, in the case of set-asides, to the amount of land taken out of production. Larger farms account for a significant share of the nation's acreage and production, so they often reap significant benefits.

Specific data on the $500K sales class are not yet available for the 1983 farm programs, but some research on participation and distribution of benefits is available for the late 1970's and early 1980's. As a group, these farms had relatively low participation rates in the

The $500K Farms Maintain Their Margins, While Other Farms Struggle with an Income-Expense Squeeze



*Average for all farms in sales class.

federal set-aside programs of 1979. They put less than 1 percent of their land in set-aside that year, and their acreage accounted for only 3.8 percent of the total acreage in set-aside programs.

Direct federal farm support payments to $500K farms reached $244 million in 1982, an average of $9,700 per farm. Overall, these payments did not make a big difference in the balance sheets of large farms. At their highest, the payments constituted only 1.6 percent of gross farm income in both 1969 and 1972, and they made up less than 1 percent of income in 1982.

The more telling figure, by far, is the large farms' share of direct program payments to all farms. It increased from 3 percent in 1969 to 7 percent in 1982. This share is far out of proportion to their numbers, but it does not appear to be out of proportion to their share of U.S. farm production.

Payments through federal farm support programs represent a direct transfer of funds from U.S. taxpayers to the farm sector. In the case of the $500K farms, the transfer is going to farm businesses with 6-figure net incomes. Even with restrictions on the size of payments to individual producers, the policy of paying large farmers out of the federal treasury remains very controversial.

On the other hand, acreage reduction programs might not be very effective in doing what they are intended to do—cutting plantings and production—if they did not offer incentives to attract the farms with large acreages. Already, most of these programs—with the exception of PIK—include a $50,000 payment limitation. □

[*Written by economist Paul Velde of the National Economics Division, Economic Research Service.*]

More Staying Power?

Are super farms the wave of the future? A number of factors besides efficiency will help determine what types and sizes of farms prosper and multiply in years ahead, but efficiency will surely enter the picture.

Several studies have suggested that long-run cost efficiencies remain relatively stable over several farm sizes and then deteriorate somewhat for very large farms. Because the necessary data are lacking, the same measures have not been specifically applied to farms in the $500,000 sales class.

One possible indicator, however, is based on the ratio of farm production expenses to gross income. This ratio has several limitations as a pure efficiency measure. For example, it does not factor out the price advantages large farms may enjoy through bulk input purchases and bulk product marketings.

Nevertheless, it can be used as one yardstick for efficiency, as well as financial strength and potential staying power. By this measure, the large farms appear to have more staying power, particularly in rough economic times, than smaller farms.

In 1982, production expenses amounted to 69 percent of gross farm income for the $500K farm group. In 1969, the figure was about the same—from each dollar of gross income, 68 cents went to pay expenses. During the intervening years, figures ranged from 67-75 cents.

Most of the other farm sales classes started out with roughly the same 1969 ratio as the $500,000 farms. The trouble is that the ratio has climbed dramatically for all the other farm classes. Take farms in the $40,000-$99,999 sales class. Their expenses climbed from 71 cents per dollar of income in 1969 to 93 cents by 1982. In the smallest sales classes, expenses match or even exceed gross farm income.

Farms with expenses that consistently take 90 percent or more of gross income probably won't survive too many years, at least without substantial off-farm income. In fact, most small to midsize farms depend primarily on income earned off the farm.

What worries some analysts, however, is that farms in the $100,000-$199,999 sales class are perilously close to the financial trouble threshold of 90 cents in expenses per dollar of income. Even the $200,000-$499,999 class—at 84 cents in expenses per dollar of income—is not far behind.

In effect, only the largest farm class, the $500K farms, has been able to maintain a low and fairly stable expense-income ratio. This appears to dispel the notion that the biggest farms are more likely to get into trouble during difficult times because of their heavy dependence on purchased inputs and a steady cash flow.

Energy is one area where the large farms seem to excel. They laid out 12.5 percent of total farm sector expenditures for energy and petroleum products in 1978, but their energy bills accounted for only about 2.6 percent of their sales. For other classes of farms, the percentages were higher: 4.9 percent of sales for farms in the $200,000-$499,999 class; 5.6 percent for farms in the $100,000-$199,999 class; and 6.8 percent of sales for the $40,000-$99,999 class. Thus, it appears that the larger farms may be more energy efficient—they generate more sales per dollar spent on energy.

Industrial Growth: Municipal Problems Move to the Country

Industrial growth in rural areas can be a mixed blessing. If it's well planned, properly timed, and carefully keyed to the community, it brings new jobs, higher incomes, and perhaps a fresh lease on life for the community and its residents.

In the real world, however, growth often comes when least expected, it hits too fast too soon, and it's rarely tailored to the community. The benefits may be hard to resist, but so is an influx of people—new residents and commuters—to fill many of the new jobs.

The attendant population pressures often mean escalating costs for maintenance and improvement of roads, water and sewage systems, sanitation services, schools, police and fire protection, public health facilities, and a host of other public services. The all-too-common result: higher taxes, reduced public services, and a serious squeeze on local government budgets.

"In many cases, industrial growth is a trade-off," says Lloyd Bender, an economist with USDA's Economic Research Service. "Generally, if population grows faster than revenue, local governments reduce services or raise taxes, and maybe even go into debt." This, he explains, affects not only the community's residents, but also the businesses.

"If there are inadequate community services, employers can almost certainly expect lower productivity, higher accident rates, absenteeism, and rapid turnover—all of which affect the business balance sheet," Bender says.

Those who suffer the most, according to some economists, may be the long-time residents. "These people pay the price, often without getting a corresponding benefit of a better job," Bender says. In return, they may demand a major share

of the benefits of new tax revenues at the same time the additional funds are needed to improve highways or other services to new neighborhoods and new residents. Public officials are caught between these conflicting claims.

So, if industrial development is beneficial or unavoidable, how can a rural community manage the accompanying problems?

The solution may seem obvious. If industrial growth is the source of the problem, the new industries should assume the added tax burden. In practice, it isn't that simple.

Bender and his colleague Thomas Stinson suggest that each situation be dealt with individually. Both economists also agree that many strategies, and combinations of strategies, are available to cope with the local government impacts. These impacts fall into four basic categories—spillovers, front-end deficits, boom towns, and uncertainties.

The Problems

Of all the impacts, *spillovers* are the most common. They occur when new population from a business or industrial development "spills over" the boundaries of the local government that has taxing authority on the new business or industry. Another community may have to contend with new residents on its side of the border without having access to taxes from their employer.

A primary example is workers commuting from outlying areas. Those new residents pay property taxes where they live, but such revenues are rarely sufficient, at existing tax rates, to cover the costs of all services without the added industrial tax base.

The most dramatic spillovers occur when workers commute over state lines as they do in Sheridan County, Wyoming. There, miners commute to nearby southern Montana coal mines.

Less serious, perhaps, than spillovers are *front-end deficits*. These are temporary and occur when local revenues don't increase as rapidly as population. Small front-end deficits accompany any expansion, although problems are aggravated when development requires that a large construction work force move quickly to an area.

The question is: How can rural communities cope with the problems that accompany industrial growth?

Taxes and state aid to local jurisdictions are usually based on past rather than current population, so revenues lag behind the growth in demand for services. For the community, the result may be cash flow problems that take several years to resolve.

Boom towns sound like something out of the Old West, but they're still fairly common today. Initially, new jobs are first available for local residents. Things become more complicated, however, when employment opportunities are expanding in spurts from different sources and new residents arrive in surges and lapses that are not easily anticipated.

In such cases, community facilities are likely to alternate between being adequate and inadequate, situations that can't be efficiently handled even with planning. Eventually, workers may even outnumber jobs, bringing higher unemployment benefits, along with greater demand for public and private services, adding to the fiscal headache.

Temporary population surges present a large dilemma. The choices: Tolerate inadequate facilities until population surges subside, or expand facilities until the peak population can be served. The latter saddles permanent residents with high operating, maintenance, and debt-service costs for a long time. In either instance, the community's long-term residents are likely to suffer.

Uncertainty is another concern. First, uncertainties are often connected with a project's construction and operation schedule. Starting date, length of construction, start-up time, and number of construction and operating employees are all subject to change. Communities anticipating demands for local public services risk investing in them only to have the project curtailed or even cancelled. Exxon's decision to halt oil shale development at Parachute, Colorado, is an example.

High technology processes, such as oil shale and synthetic fuel plants, are most likely to cause uncertainty, but even stable technology manufacturing firms can alter plans in response to market conditions, regulations, or newer technology.

The degree of uncertainty over a project can cost a community heavily if bonds are issued for local capital improvements. Higher risk ventures will cost the community more in interest on the bonds. And future costs can also be uncertain—from potential environmental damage to the need for social service programs in case the new plant shuts down permanently.

Possible Solutions

According to Bender and Stinson, many growth management strategies are available, but not all are suited to every problem. "Tax systems could be modified. Grants, loans, or loan guarantees are generally available from the federal or state governments. Or, localities with no other options can restrict development," Stinson says. "However, some solutions help one impact, but not the others. For example, prepayment of property taxes, which could address front-end deficits, would have no impact at all on spillovers," he adds.

In a recent report, Bender and Stinson examined twelve possible strategies for dealing with rapid development:

- Grants—the traditional federal and state response to local government needs—are effective against all types of

impacts, but they are most appropriate when new tax revenues will never be sufficient to cover needed expansions in services without higher tax rates. Spillovers and boom towns are the best examples. Some spillovers may even require continued grants to cover operating costs.

• Localities may borrow from the federal or state governments or from the national money market if they issue municipal bonds. A loan program works well for front-end problems when future revenues will increase. Loans are not effective against spillovers or boom town effects. And borrowing heightens local uncertainty, since local liabilities are increased if revenues are later disrupted for any reason.

• Loan guarantees, sometimes made by the federal or state governments, insure a portion or all of a loan in case of a default.

States may also reduce uncertainties and front-end impacts by issuing loan guarantees on the basis of potential taxes from the new firm. Forgiveness clauses can allow loans to revert to grants if the firm permanently shuts down.

• Shared state taxes can help limit spillover and boom town effects. For example, North Dakota returns 30 percent of its coal severance tax and coal conversion taxes to the local governments where the coal mines and plants are located.

• Improved aid formulas that base aid on current or expected population could help front-end problems. Most currently used formulas base aid on the most recent U.S. Census data, and revenues may remain constant until a new Census is taken.

• Consolidation and annexation can sometimes reduce spillover problems and are particularly effective when a city can annex the industrial development that is outside its border. However, consolidation of city and county responsibilities or school districts is a major change in governmental structure and is never accomplished easily. Neither consolidation nor annexation are feasible solutions to problems caused by long distance commuting, or front-end, boom town, or uncertainty impacts.

Development usually brings population growth, and that means an expanded need for public services.

• Contracting for services with other local governments or the private sector is often suggested as a way to reduce costs. Contracting may be effective against temporary front-end impacts due to large construction work forces. Then, a community can avoid purchasing new capital equipment until the population stabilizes.

• Restrictive zoning can be used to control the amount and timing of local population growth.

• Conditional permits—which can force developers to construct community facilities or to make payments and grants to governments as a condition of a permit—can be used for all types of impacts. "But, such hardball politics depends on the strength of the locality's negotiating position," Bender says. Sometimes the concessions go the other way with the community offering tax breaks or other incentives to attract new business.

• Proper timing of development permits can affect the scheduling of new activities and is especially effective in reducing boom town effects if multiple development projects are likely.

• Prepaid property taxes can be required of the new firm to help eliminate front-end deficits. "But, if future property tax revenues are not greater than expected costs, prepayment will only delay deficits from the first years of construction to a later time," Stinson says.

• Bachelor quarters have been a good alternative for outside construction employees brought in to build a new industrial site—a project that may take a year or more to complete. By encouraging these temporary residents to leave their families at home, bachelor housing can help reduce a community's local population increases. Advantages to the community can be significant. Front-end, spillover, boom town, and uncertainty problems are all reduced if the number of temporary residents is cut. Local schools receive fewer new students, so financial pressures are not as great, and the community receives an addition to its local property taxes as well. □

[*Based on information provided by Lloyd D. Bender and Thomas F. Stinson of the Economic Development Division, Economic Research Service. Bender works out of Montana State University and Stinson is stationed at the University of Minnesota.*]

The Legacy of Drought '83

The drought of 1983 has left a summer many farmers would rather forget. In its wake are withered corn and soybean fields and sharply higher feed costs for livestock and poultry producers.

Despite showers across much of the Grain Belt during the closing days of August, there was still no indication that the drought had finally lifted. For both farmers and consumers, questions remained on how much output the weather would spare—and at what prices.

Whatever the final impact, the drought will leave an uneven legacy among producers that may just about balance out in the overall farm income picture. Reduced crop marketings and lower returns to livestock producers will probably be offset by higher crop prices, say USDA economists.

Farmers whose fields escaped substantial damage and those marketing PIK crops will reap the benefits this year and next. Livestock prices, particularly late next year and into 1985, will also be higher than previously expected as meat output adjusts to higher feed prices.

Because of large grain stocks and this year's record meat supplies, consumers probably have little to fear. The drought's impact is expected to show up in 1984 and 1985 food prices, but even then its contribution should be relatively small (see page 13).

A Dramatic Turnabout

However limited its effect on overall farm income and food prices, the drought is a major disaster for many producers—in fact, for entire communities—in weather-ravaged areas. In terms of crop and yield losses, it may go down as the worst drought since 1974 and possibly as the worst since the 1930's.

Through most of July and August, dry, scorching weather blistered the heart of the nation's Corn Belt, much of the Southeast, and western Texas. Temperatures averaged well above normal, frequently topping the 100° mark. A summer that began with excellent soil moisture and prospects for record crop yields turned into one of the hottest, driest growing seasons in recent memory.

"I've never seen such a dramatic turnabout in just a few weeks," says Norton Strommen, USDA's chief meteorologist. "If we hadn't had good to excellent soil moisture at the beginning of the summer, things would be a lot worse."

At the start of July, there were only three relatively small problem areas, says Strommen. Then the drought took hold, spreading across the nation's midsection into the Delta and Southeast—and it was unlike either of the two previous droughts.

The 1974 and 1980 droughts both began in June, and both ended in most areas by late July or early August. Neither blanketed the prime corn and soybean production areas as completely as the 1983 drought, Strommen says.

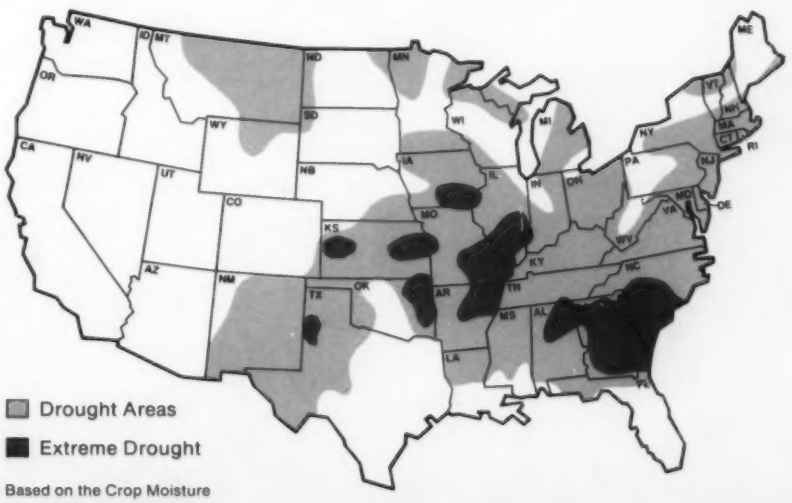
In 1980, a dry spring allowed early planting, and crops were well advanced by the time the drought hit. This year a wet spring delayed plantings and, because of the drought's length, both corn and soybeans were damaged during their crucial growing periods. In the Corn Belt, the critical silking stage for corn comes in late July and early August, while the critical pod-filling stage for soybeans occurs in August and early September.

Farmers unintentionally contributed to drought damage by planting more seeds per acre and applying extra fertilizer to increase yields. It seemed a wise business move, not only to compensate for reduced acreages, but also to take advantage of higher crop prices later.

"When drought came, the higher seed density took the moisture right out of the soil," says Strommen. "The extra fertilizer was another negative factor because of the hot, dry weather."

Despite widespread crop damage, conditions are mixed. "It's not a bust in all areas," he adds. "What we will see is a great variability in yields from one place to another and from one soil type to another."

The Drought of 1983 Strikes the Heart of the Corn Belt



Based on the Crop Moisture Index as of Aug. 20, 1983

In fact, for the winter wheat crop, which is harvested during the summer, the dry weather provided ideal field conditions. The crop came in with record yields and near-record output.

Higher Crop Prices, Higher Feed Costs

Another result, of course, is higher grain prices. Diminished harvests and a sharp reduction in market-depressing feed grain stocks promises enduring price strength. From late June to late August, corn prices in central Illinois rose from $3.14 per bushel to $3.52. They reached a high of $3.77 in mid-August, compared with June's high of $3.19.

Soybean prices, too, have rebounded. Between August 1 and August 26, central Illinois soybean prices jumped from $7.06 a bushel to $9.11. They ended August at $8.73, compared with a June 30th price of $5.95 and a June high of $6.10.

None of this is good news for livestock and poultry producers, even though higher prices were already anticipated because of this year's sharp acreage reductions.

In the cattle sector, higher feed costs and a squeeze on producers' margins will mean more animals sent to slaughter this fall and winter. The expected reductions in hog inventories will be accelerated by higher feed costs and will also add to larger meat supplies. Because meat supplies are already at record or near-record levels, the increased output will temper any price gains for the next several months.

By the second half of next year, however, these adjustments should have run their course, and red meat supplies will be down—even lower than they would have been without the drought. Thus, livestock prices may increase substantially from the summer of 1984 into 1985.

What the Drought Wrought

As of September 1, analysts were awaiting the results of on-site yield surveys by USDA's Crop Reporting Board to assess August crop damage. Their report, issued in mid-September, will be followed by similar *Crop Production* reports in mid-October and mid-November. Final production figures for fall harvests won't be in until January.

Good September rainfall would stave off further losses. Fall harvest weather can also make a difference. Although chances are fairly remote, an early frost could be a further blow. Another factor: farmers' decisions on how much of the damaged crops to harvest for grain.

In late August, Gail Hanneman, an agricultural statistician with Iowa's Crop and Livestock Reporting Service, noted that some farmers were green chopping their corn for fodder. "Newspaper accounts of the damage may be too pessimistic," he said, "but day after day of high temperatures and no rain has left farmers pretty discouraged." Iowa suffered 22 days of over 95° temperatures during the month, he reported.

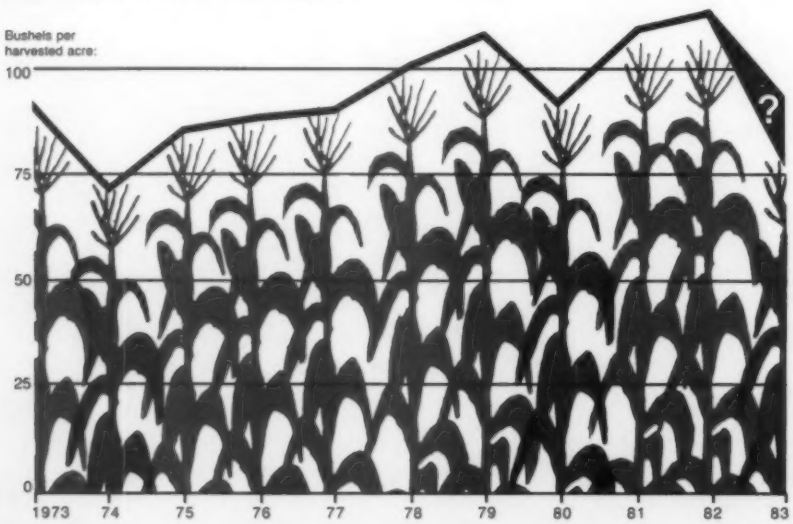
In Illinois, crop statistician John Unger noted that late August rains may have helped late-planted and late-maturing varieties of soybeans, but for corn the rain was mostly too late.

Aside from the questions on the size of this year's harvests and the quality of the crop, there are additional concerns for 1984 and beyond. "We are short of subsoil moisture in almost all major production areas as we approach fall plowing in preparation for 1984 crops," says meteorologist Strommen. "Prospects for next year's crops thus depend on soil moisture recharge in the fall, winter, and spring ahead."

Strommen also worries about the possibility of a long-term shift in weather patterns. He speculates: "We may have returned to the pattern of the past when greater weather variability was the rule. If that's the case, we could continue to see greater weather fluctuations in years ahead, and we should be ready to deal with them." □

[*Based on information provided by economists Don Seaborg, Ralph Parlett, and Gary Lucier of the Economic Research Service, and meteorologist Norton Strommen of the World Agricultural Outlook Board.*]

Corn Yields: How Low Will They Go?



Waiting for the Food Bill

For most consumers far from the farm, the impact of the 1983 drought will be measured at the grocery store. In the process, the drought may get more blame than it deserves.

In the first place, the drought's impact on food prices may come a bit later and may end up to be somewhat smaller than consumers might expect. Beyond that, it will be difficult—impossible from the checkout counter—to clearly separate the drought's impact from the many other factors that keep food prices rising each year, regardless of harvests.

USDA analysts looking at the consumer end of the agricultural outlook will sharpen their forecasts when they get a better picture of this year's crop damage. Even at this point, however, it's fairly evident that fears of massive food price runups or shortages are out of tune with the facts.

For example, the drought had little or no impact on most fruits and vegetables, and it provided good weather for the winter wheat harvest this summer. Wheat supplies will remain close to record levels throughout the 1983/84 crop year.

Aside from relatively minor food items such as sweet corn, withered corn and soybean harvests will affect consumers almost exclusively through meats and poultry, especially beef. Higher feed costs and shrinking margins for producers will probably mean some reduction in meat supplies, and higher meat prices, in the last half of 1984 and into 1985.

In the meantime, producers are expected to respond to reduced returns by sending more animals to slaughter this fall and winter. The result: increased meat supplies and very little upward pressure on retail prices.

Before the drought hit, analysts had projected food prices to rise only 2 to 4 percent this year, and they're now pointing to the lower end of the range. For consumers, that would mean the smallest increase in 16 years.

Next year's food prices will rise at a faster rate.

Next year's food prices will probably rise at a faster rate, but not primarily because of the drought. In any given year, food prices respond to many factors, including inflation, domestic and foreign demand, and stocks on hand.

For an indication of the errors that can be made in assuming a direct link between crop size and food prices, consider the 1974 and 1980 droughts. Both droughts followed record crop years. In 1973, a record crop year, food prices rose 14.5 percent; in 1974, the drought year, they rose 14.4 percent; and in 1975, the year when the farm price effects of the drought should have shown up at retail, food prices rose only 8.5 percent.

From Feed to Meat

"Higher feed costs do not directly translate into higher retail meat prices," says economist Ralph Parlett of USDA's Economic Research Service. "Rather," he explains, "changes in feed costs prompt livestock and poultry producers to alter production plans.

"When the outlook is for high feed grain prices, as it is now, livestock producers tend to cut production plans. This process begins with some liquidation of animal inventories, which increases slaughter and causes larger meat supplies. Therefore, the initial effect is lower retail prices.

"As meat supplies eventually dwindle, however, retail prices begin to rise. Higher prices encourage farmers to begin rebuilding breeding herds by holding animals off the market. Thus, meat supplies fall even lower, putting further upward pressure on prices."

The pattern is similar for the 1980 drought. In 1979, a record crop year, food prices climbed 10.9 percent; in 1980, a drought year, they rose 8.6 percent; and in 1981, the year following the drought, they were up only 7.9 percent.

Of course, this doesn't mean that 1984's food price rise will be lower than this year's rise. All it indicates is that farm prices are only one component—and usually not the major one—in the food price picture. General inflation in the economy and its effect on wages and other processing and marketing costs are far more important.

For this very reason, food price rises are expected to be higher next year. Recovery in the economy suggests a somewhat higher inflation rate along with rising processing and marketing costs. These costs make up about 70 percent of retail food prices.

Even this news isn't all bad. The inflation rate will remain relatively low, and food price rises are unlikely to exceed it. No one currently expects 1984 to bring a return to the annual food price increases of 8-11 percent experienced between 1978 and 1981. □

Retail Food Price Rises Moderated in 1982 and 1983

	Foodstore prices	All food prices[1]
	percent increases	
1973	16.3%	14.5%
1974	14.9%	14.4%
1975	8.3%	8.5%
1976	2.1%	3.1%
1977	6.0%	6.3%
1978	10.5%	10.0%
1979	10.8%	10.9%
1980	8.0%	8.6%
1981	7.3%	7.9%
1982	3.4%	4.0%
1983[2]	1-2%	2-3%

[1]Includes food purchased at restaurants, etc.
[2]Forecast.

REPORTS IN THE NEWS

Reversing the Trend?

The decline in farmland values over the past 2 years may have halted or even reversed.

USDA's March 1 farmland market survey of real estate brokers and appraisers, county officials, farmers, and farm lenders found stabilizing land values. An April 1 survey by the Federal Reserve Bank of Chicago showed the value of good farmland in Iowa and parts of Illinois, Indiana, Michigan, and Wisconsin an average 2 percent higher than in the previous quarter.

This is good news for farmers, especially after 1982's 6-percent decline and 1981's 1-percent drop in overall farmland values. The Corn Belt suffered the most both years—with farmland values dropping 12 percent in 1982 and 10 percent in 1981.

The real value of U.S. farmland (adjusted for inflation) dropped 10 percent in 1982. After falling 3 straight years, real values are now 18 percent below their peak in 1980.

Cash rents for farms did not drop proportionately to farmland values. In fact, the rent-to-value ratio in most states increased. But in a majority of the 23 states for which data are available, cash rents did go down. Decreases concentrated in the Corn Belt, Appalachian, and Delta regions. Declines in rents paid for cropland and pasture show similar regional patterns. Cropland rents were lower in 20 of 29 states, and pasture rents were down in 13 of 24 states.

Seller financing of farm real estate sales diminished substantially during 1982, leaving Federal Land Banks as the largest farmland lender of new farmland purchases for the first time in more than a decade.

Farm Real Estate Market Developments *by Charles Barnard, John Jones, and James Hrubovcak. (Published August 1983; 38 pages of text and tables; GPO Stock No. 001-000-04354-4; $3.50.)*

Breaking Even on Pesticides

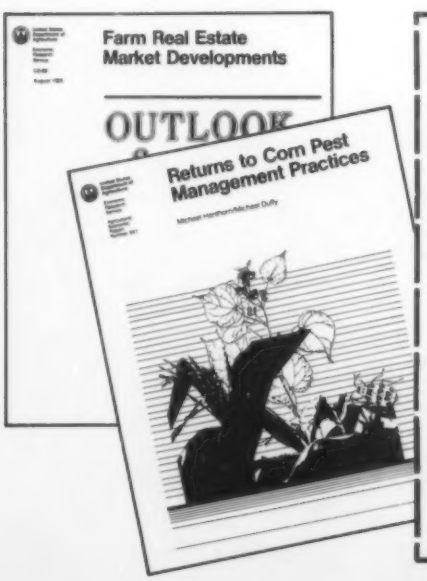
After tallying up the costs of herbicides and insecticides used on 1980's corn crop, economists indicate that U.S. farmers essentially broke even. For each $1 spent on herbicides and insecticides, farmers received $1.05 and $1.03, respectively, from increased yields.

These findings are part of an analysis of the pest control practices of U.S. corn farmers in the 10 major producing states during the 1980 growing season. The pest management practices considered were herbicide and insecticide use, tillage systems, mechanical cultivation, and field scouting.

Other major findings of the analysis:

- Farmers harvested an additional 1.24 bushels of corn for each additional pound of herbicides applied per acre.
- Farmers who applied insecticides harvested an additional 2.44 bushels of corn per acre compared with yields for farmers who did not apply insecticides.
- Average per acre yields did not vary significantly for farmers using different tillage systems. However, no-till farmers incurred a significantly higher herbicide cost than reduced-till or conventional-till farmers because they applied more expensive broad-spectrum materials. The higher average herbicide cost for no-till farmers was offset by a reduction in tillage costs.
- Average per acre yields for farmers who mechanically cultivated their fields two or three times were significantly lower than yields for farmers cultivating less. But, their herbicide use and costs were also much lower.

Returns to Corn Pest Management Practices *by Michael Hanthorn and Michael Duffy. (Published June 1983; 13 pages of text and tables; GPO Stock No. 001-000-04338-1; $2.50.)*



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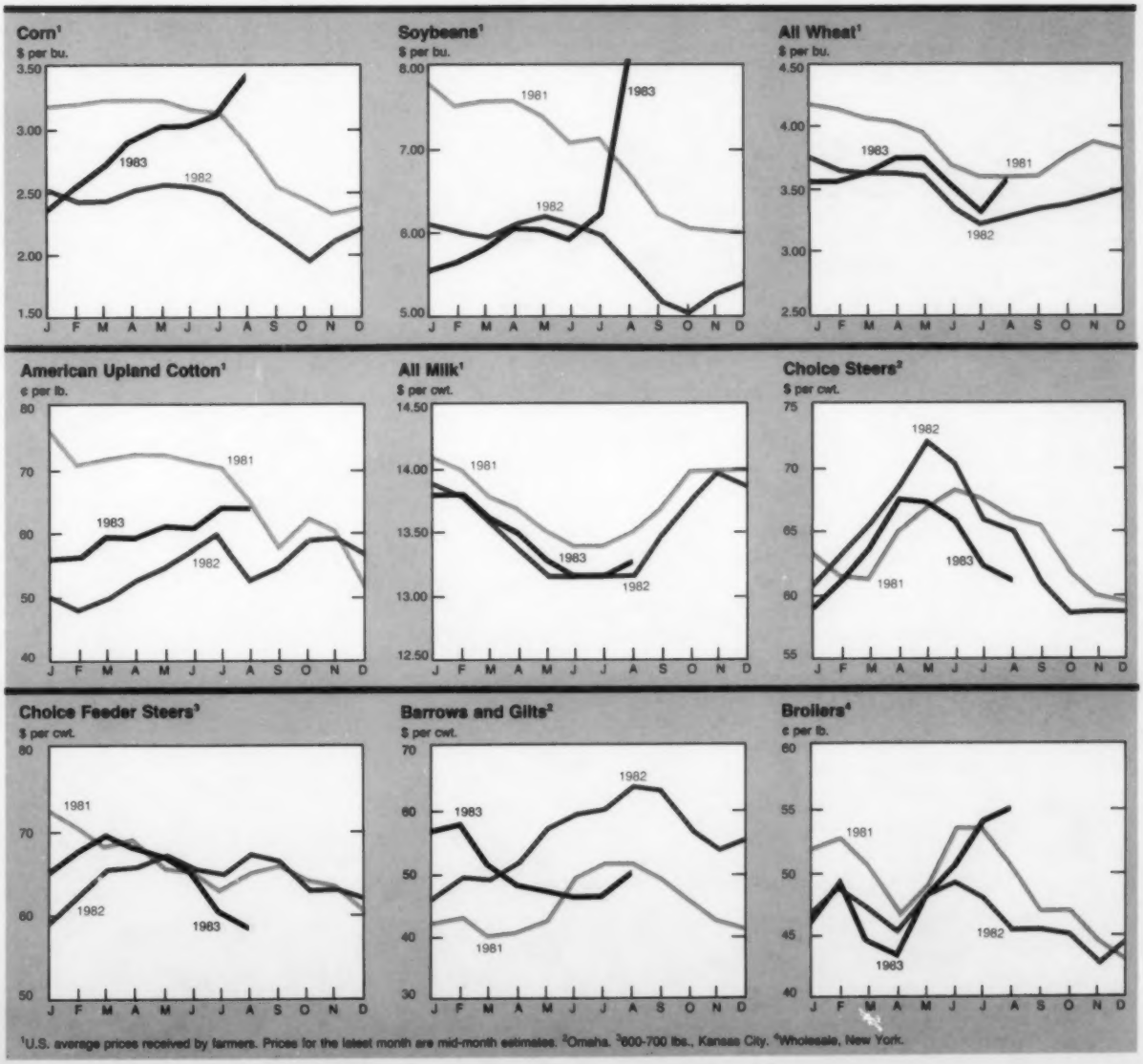
FARMLINE TRENDS

Monthly Price Monitor

USDA's index of farm prices jumped 4.6% in August—the largest month-to-month increase in the last few years—as drought dramatically boosted crop prices. At $3.45 per bushel, corn prices matched October 1974's record high. Soybeans topped $8 a bushel for the first time since November 1980, and wheat went back above $3.50. For livestock, choice steers and feeder steers showed slight declines, but barrows and gilts rose to over $50 per cwt for the first time in 5 months. Broiler prices hit 55¢ a lb., the highest since September 1980.



[1]U.S. average prices received by farmers. Prices for the latest month are mid-month estimates. [2]Omaha. [3]600-700 lbs., Kansas City. [4]Wholesale, New York.

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USDA's 60th annual Agricultural Outlook Conference convenes on October 31. The 4-day conference opens with the outlook for the economy, agriculture and trade, and international monetary policy.

Succeeding sessions will cover the major farm commodities and such topics as the family farm, crop insurance, animal and plant health, transportation, consumer food spending, human nutrition, and technology in the home. A provocative finale is planned for November 3, with speakers addressing the future of agriculture, including the outlook to the end of the century, genetic engineering, the information explosion, and other major trends—what to look for, how to prepare.

Brand new this year: a 900 telephone line will provide live access to most speeches in case you can't attend in person. You can listen to an hour-long session for less than $22, plus tax. It's ideal for businesses, classrooms, and conference rooms equipped with speaker-phones.

To receive a copy of the preliminary conference program—with times and dates, locations, and 900-line telephone numbers—write to: Outlook '84, 900-Line, USDA-WAOB, Room 5143-South, Washington, D.C. 20250. Or call (202) 447-3050.